

STUDIES ON QUANTITATIVE MEAT PRODUCTION OF KABIR POULTRY

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Abstract

The research aimed at evaluating the quantitative production of meat (the yield at slaughter, the weight of the cut regions and the weight of the edible organs) in birds of the Kabir breed (10 males and 10 females) slaughtered at the age of 50 days. The fresh slaughter yield was 68.51% in males and 68.12% in females, with an average of 68.31%; after refrigeration the yield, the average value obtained for the two sexes was 67.62% (67.72% in males and 67.51% in females). Regarding the proportion of the cut parts, the average values obtained for the two sexes were 20.22% for the chest (21.02% for males and 19.41% for females), 24.86% for whole legs (25.92% for males and 23.80% for females), 11.28% for wings (11.47% for males and 11.09% for females) and 43.65% for back (41.59% - male and 45.70% female). The average weights determined for the internal organs were 36.32g in males and 31.83 g in females in the case of liver, 8.31 g in males and 6.34 g in females in that of hearts and respectively, of 31.98 g-males and 29.16 g-females in the case of gizzard. In conclusion, it can be stated that the birds of the Kabir breed slaughtered at the age of 50 realize a satisfactory production of meat, both in terms of the yield at slaughter and the weight of the anatomical regions.

Key words: Kabir, slaughter yield, sliced portions, edible organs

INTRODUCTION

It is known that most categories of people have started to seek more and more high quality animal products [1, 6].

Under these conditions, the breeding of birds takes on new dimensions, given that this species provides meat in the shortest time [12, 13] and at the lowest cost prices [12, 14].

Also, in recent years there has been a decrease in demand for poultry meat from conventionally raised chickens, up to a maximum of 42 days [3].

Thus, slow-growing hybrids were introduced into production, which are slaughtered at an older age, but which produce meat with higher technological and culinary properties [4, 8].

Also in this direction have been modified the growth technologies, in the sense that the age of slaughter has been increased (to 70 or 80 days), is frequently resorted to free-range

and especially organic growth [10, 15], feed containing at least 70% cereals etc. is administered [5, 7].

Some breeders use various pure breeds for intensive production, based on some of their superior native characteristics (meat quality, good growth rate, high share of major anatomical regions, etc.) [2, 11].

For these reasons, we evaluated the quantitative production of meat in Kabir birds, a breed of chickens used by more and more breeders in our country for meat production.

MATERIAL AND METHOD

The investigations were carried out on 20 birds of the Kabir breed (10 males and 10 females), reared under the conditions of the Biobase of the Faculty of Zootechnics in Iasi and slaughtered at the age of 50 days.

The specific determinations were carried out according to the agreed methodologies and targeted the following parameters:

- the weight of the carcasses was determined in the laboratory, by weighing each of them using the analytical balance. Carcass weighing was performed both after

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The manuscript was received: 25.09.2019

Accepted for publication: 18.12.2019

slaughtering the birds (fresh) and after refrigerating for 24 hours at + 4oC (cold);

- the yield to slaughter - represents the percentage ratio between the live weight of the birds and that of the carcasses obtained, according to the relation:

$$R (\%) = \frac{\text{Weight of carcass}}{\text{Live weight}} \times 100$$

And the yield at slaughter was calculated both fresh and cold;

- the weight of the sliced portions - the carcasses obtained after the slaughter of the birds were cut in anatomical regions, respectively, whole leg, chest, wings and back. Each anatomical portion was weighed and then related to the weight of the carcass of origin;

- the weight of the internal organs - the main edible organs (heart, liver and gizzard) were collected from the carcasses of provenance and then weighed to the analytical balance.

RESULTS AND DISCUSSIONS

Yield to slaughter. A first parameter analyzed was the weight of the chicks before slaughter.

Thus, for males, body weight was 1618.0±10.87 g (V%=3.68), and that of females 1378.03±10.22 g (V%=6.85), the average weight for both sexes was 1498±10.22 g; for the coefficient of variation, a value of 3.74% was obtained, which impresses upon the analyzed group a very good homogeneity.

Following the determinations made it was found that the weight of the fresh carcass in the case of males registered an average value of 1108.61±8.15 g and the cold determined of 1095.91±8.13 g.

The average weight for the fresh carcasses obtained from females had a value of 938.59±11.52 g compared to 930.19±11.45 g as obtained in the case of weight after refrigeration.

Regarding the weight of the fresh carcasses calculated for both sexes, the average obtained was 1023.39±7.25 g, and the coefficient of variation of 3.88%.

Regarding the weight of the cold casing for both sexes, the average was 1012.93±7.19 g with a coefficient of variation of 3.89%.

After performing the calculations to determine the yield at slaughter, an average value for both sexes of 68.31±0.10% was determined, when the assessment was made immediately after slaughter, while, after refrigeration, a slight value resulted a lower yield for both genders of 67.620.10%.

In the case of males from the Kabir breed, the average yield value calculated immediately after slaughter was 68.51±0.10% (V%=4.03%) and the one after refrigeration of 67.72±0.11% (V%=0.85%).

For females, the yield obtained immediately after slaughter registered a value of 68.12±0.10% with a coefficient of variation of 0.84%, and for refrigerated carcasses, the average value of the yield was 67.51±0.11% with a coefficient of variation of 0.88% (tab. 1).

Table 1 Yield for slaughter in Kabir birds

Specification	Males		Females		Both sexes	
	$\bar{X} \pm s_{\bar{x}}$	V (%)	$\bar{X} \pm s_{\bar{x}}$	V (%)	$\bar{X} \pm s_{\bar{x}}$	V (%)
Live weight (g)	1618.0±10.87	3.68	1378.03±17.24	6.85	1498.0±10.22	3.74
Weight of fresh carcass (g)	1108.61±8.15	4.03	938.59±11.52	6.72	1023.39±7.25	3.88
Yield after slaughter (fresh) (%)	68.51±0.10	0.81	68.12±0.10	0.84	68.31±0.10	0.82
Weight of cold carcass (%)	1095.91±8.13	4.06	930.19±11.45	6.74	1012.93±7.19	3.89
Yield after refrigeration (g)	67.72±0.11	0.85	67.51±0.11	0.88	67.62±0.10	0.85

The sliced portions of the carcass. From this point of view it was found that the chest with bone and skin recorded a proportion of $21.02 \pm 0.01\%$ in males (230.41 g) and $19.41 \pm 0.01\%$ in females (180.59 g), the average value for birds of both sexes being $20.22 \pm 0.01\%$ (205.50 g); the studied character was homogeneous, the values of the coefficient of variation being 0.18-0.27% in the case of the proportion of this region in the composition of the carcass and 4.23-6.68% respectively in the one of the chest weight.

Regarding the weight of the whole legs in the carcass structure, in the case of males it was 25.92%, compared to 23.80% as found in the case of females, with an average of the two sexes of 24.86%, under the conditions with a very good homogeneity ($V\%=0.07-0.11$). Therefore, the weight of the whole leg in males was 284.03 ± 1.88 g, that of females 221.39 ± 2.39 g, and the average weight for both sexes was 252.71 ± 1.65 g; the studied character was homogeneous, the values of the coefficient of variation being 4.21-6.69%.

For wings, higher weights were found in those from males, of $125.690.59$ g ($V\%=4.60$), compared to 103.14 ± 0.71 g as weights females ($V\%=6.76$); the average weight established for both sexes was 114.41 ± 0.49 g ($V\%=4.19$); reported to the weight of the carcasses, the wings represented 11.47% in the case of males, 11.09% in that of females, with an average of the studied population of 11.28%; the character was very homogeneous, the proof in this respect being very small values of the coefficient of variation ($V\%=0.15-0.27$).

A last analyzed region was represented by the cutlery (with head and claws), its share in carcasses from males being only 41.59% (455.78 ± 2.09 g), compared to 45.70% (425.07 ± 2.69 g) as it was for females; the average value calculated for the weight of the back in the two sexes was 440.43 ± 1.79 g, which represented 43.65% of the carcass weight (tab. 2).

Table 2 Weight and proportion of sliced portions of carcasses

Specification	Males		Females		Both sexes		
	$\bar{X} \pm s_{\bar{x}}$	V (%)	$\bar{X} \pm s_{\bar{x}}$	V (%)	$\bar{X} \pm s_{\bar{x}}$	V (%)	
Weight of refrigerated carcass (g)	1095.91 ± 8.13	4.06	930.19 ± 11.45	6.74	1013.05 ± 7.19	3.89	
Chest with bone and skin	weight (g)	230.41 ± 1.65	4.57	180.59 ± 1.99	6.68	205.50 ± 1.39	4.23
	proportion (%)	21.02 ± 0.01	0.25	19.41 ± 0.01	0.27	20.22 ± 0.01	0.18
Whole legs with bones and skin	weight (g)	28403 ± 1.88	4.53	221.39 ± 2.39	6.69	252.71 ± 1.65	4.21
	proportion (%)	25.92 ± 0.01	0.11	23.80 ± 0.01	0.11	24.86 ± 0.004	0.07
Wings with bones and skin	weight (g)	12.69 ± 0.59	4.60	103.14 ± 0.71	6.76	114.41 ± 0.49	4.19
	proportion (%)	11.47 ± 0.004	0.22	11.09 ± 0.004	0.27	11.28 ± 0.002	0.15
Back with head and feet	weight (g)	455.78 ± 2.09	4.47	425.07 ± 2.69	6.79	440.43 ± 1.79	4.15
	proportion (%)	41.59 ± 0.02	0.25	45.70 ± 0.02	0.26	43.65 ± 0.01	0.19

Weight of internal organs. For the edible organs obtained from males, the highest weight was found in the case of the liver, where the average was 36.32 ± 0.85 g (minimum=31.05 g; maximum=42.15 g); the studied character presented a lower homogeneity, the value of the coefficient of variation being 10.48%.

The weight of the hearts showed limits of variation between 7.01 g and 9.98 g, the average value being at a level of 8.31 ± 0.16 g; the studied character presented a good homogeneity, the value of the coefficient of variation being 8.75%.

Regarding the weight of the gizzards derived from the slaughter of the males, the average value was 31.98 ± 0.60 g with a

minimum of 28.99 g and a maximum of 38.83 g; the value of the coefficient of variation was 8.51%, which denotes the homogeneity of the characteristic.

In the case of organs from females of the Kabir breed, the average established for liver weight was 31.8 ± 0.42 g, the variation limits ranging from 30 g to 35.87 g.

For hearts, the limits of variation ranged between 5.95 g and 7.12g, the average value being at a level of 6.34 ± 0.07 g, the character studied being homogeneous ($V\%=5.15$), and for the peppers an average weight of 29.16 ± 0.27 g was obtained (minimum= 25.89 g; maximum=30.14 g); the value of the coefficient of variation was 4.16%, which gave the character a good homogeneity (tab. 3).

Table 3 Weight of internal organs in birds of the Kabir breed

Specification		$\bar{X} \pm s_{\bar{x}}$ (g)	V%	Minimum	Maximum
Males	Liver	36.32 ± 0.85	10.48	31.05	42.15
	Hearts	8.31 ± 0.16	8.75	7.01	9.98
	Gizzards	31.98 ± 0.60	8.51	28.99	38.83
Females	Liver	31.83 ± 0.42	6.00	30	35.87
	Hearts	6.34 ± 0.07	5.15	5.95	7.12
	Gizzards	29.16 ± 0.27	4.16	25.89	30.14

CONCLUSIONS

The research aimed at evaluating the quantitative production of meat (the yield at slaughter, the weight of the cut regions and the weight of the edible organs) in the birds of the Kabir breed slaughtered at the age of 50 days.

Regarding the efficiency of the slaughter established on fresh carcass, an average value of 68.31% (68.51% in the case of males and 68.12% in that of females) was obtained, while for the yield after refrigeration, the average value obtained for both sexes it was 67.62% (67.72% in males and 67.51% in females).

Regarding the weight of the main regions cut to the carcasses, the values obtained in males were 21.02% for the chest, 25.92% for the whole legs, 11.47% for the wings and 41.59% for the back, and those of the cut in females, 19.41%, 23.80%, 11.09% and 45.70% respectively.

For both sexes, the weight of the chest registered an average value of 20.22%, the whole leg of 24.86%, the wings of 11.28%, and the cut of 43.65%.

In the case of the internal organs, the average weights determined were 36.32g in the liver from males and 31.83g in that collected from females. For the hearts, weights of 8.31 g were recorded for males and only 6.34 g for females, and for gizzards, 31.98 g and 29.16 g respectively.

In conclusion, it can be stated that the birds of the Kabir breed slaughtered at the age of 50 realize a satisfactory production of meat, both in terms of the yield at slaughter and the weight of the anatomical regions.

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